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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,331	03/22/2004	Hiroshi Nakayama	016907-1636	9097

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EXAMINER	
LEE, PETER	

ART UNIT	PAPER NUMBER
2852	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/805,331	NAKAYAMA, HIROSHI	
	Examiner	Art Unit	
	Peter Lee	2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *22 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-6, 8, 10-13* is/are rejected.

7)☒ Claim(s) *2,7,9 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3, 6, 8, 10, 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Higashi et al. (US 6333490) in view of Kato (US 5899599).

Higashi teaches an electronic image forming system (ie. image forming apparatus) comprising: a forming unit that is capable of placing a toner image onto a recording medium on the basis of an acquired image information (col. 4 lines 47-52); a fixing apparatus (fig. 1 part 10) (ie. fixing unit) in which the unfixed toner image is fixed by a heating roller (fig. 3 part 34) and a pressing roller (part 30), the fixing roller is taught to have inside the heating roller a first halogen lamp (part 32A) (ie. first heater) and a second halogen lamp (part 32B) (ie. second heater); a first thermistor (part 80) (ie. first temperature sensor); a second thermistor (part 82) (ie. second temperature sensor); a controller (part 86) (ie. control unit) that is able to select based on the temperatures detected by the thermistors, a heating mode (ie. selects one of a plurality of tables prepared in advance) with preset heating characteristics for a fixing operation (col. 13 lines 35-67).

Higashi teaches the second halogen heater (part 32B) located within the heating roller to be located at both end portions of the heating roller, while the first halogen heater (part 32B) to be located at a central portion of the heating roller (fig. 3).

Higashi does not teach the detection of a change in temperature when determining the operation parameters of the controller.

Kato teaches the use of detecting a rate of temperature rise and fall of a heating roller in determining a fixing operation (col. 4).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Higashi that teaches detection of a static temperature, by combining it with the teachings of Kato that teaches the detection of a rate of temperature change. One of ordinary skill in the art would have been motivated to use a detection of a temperature changing rate in order to better keep track of the temperature of a heating roller in order to maintain a set fixing temperature (col. 2 lines 1-25).

3. Claim 4, 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Higashi in view of Kato, further in view of Nishida et al. (US 6301454).

Higashi teaches all of the limitations from which the above claims depend upon. Higashi does not teach the practice of alternately rising the temperatures of two heaters that are positioned so that one is located centrally, and the other at two end portions.

Nishida teaches a fixing unit (fig. 1) with a heater roller (fig. 1 part 1) that contains within it two heaters, one main heater (fig. 1 part 2) (ie. heater which heats central portion) and one sub heater (fig. 1 part 3) (ie. heater which heats both ends). Nishida also teaches a fixing heater controlling method that has a first period in which only the first main heater is driven, and a second time period following the first where only the second sub heater is driven (col. 3 lines 50-55) (ie. control unit alternately carries out rising temperatures).

It would have been obvious to a person of ordinary skill at the time the invention was made to include two heaters inside of a heater/fixing roller and alternate the heating between the two as taught by Nishida, and use them in a fixing device as taught by Higashi. Although the two fixing devices are not exactly the same, they both are of the same field of being used to fix a toner image onto a paper sheet, and it is very possible and obvious for a controller taught in the invention of Higashi to handle the alternating powering between two heaters if they were to be within a fixing roller. One of ordinary skill in the art would have been motivated to do this in order to prevent unwanted rush currents during initial start ups (col. 3 line 63-col. 4 line 5).

1. Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higashi in view of Kato, further in view of Sawamura et al. (US 6061546).

Higashi teaches all of the limitations from which the above claims depend upon.

Higashi does not explicitly teach using temperature sensors for either a photosensitive drum or a recording medium housing cassette to control the temperature of a fixing unit.

Sawamura teaches an image forming apparatus that utilizes various sensors, one of them being a photosensitive drum temperature sensor (fig. 1 part 40), to send to a control section (fig. 1 part 50) that will maintain a desirable temperature in the fusing roller (col. 11 lines 19-25 and lines 35-45) (ie. temperature control of fixing unit in consideration of at least a signal from a temperature sensor of a photosensitive drum).

Although the first reference, Higashi, does not teach the use of cooling fans inside of the image forming apparatus, this feature is well known in the art as taught by the second reference, Sawamura; and the two references Higashi and Sawamura are analogous art because they both

are from the same field of image forming apparatuses that utilize a controlling means to adjust a fixing temperature. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include cooling fans to cool the inside of an image forming apparatus, as taught by Higashi; and further to modify the heat drive circuit of the image forming apparatus taught by the base reference Higashi, to operate according to a photosensitive drum temperature sensor to turn on and off cooling fans as taught by Sawamura. One of ordinary skill in the art would have been motivated to locate a temperature sensor for a photosensitive drum in order to adjust the temperature to prevent condensation on the drum (col. 11 lines 35-45). One of ordinary skill in the art would have been motivated to also have a controlling unit (ie. heat drive circuit) consider a temperature of a photosensitive drum as taken by a sensor to control a temperature of a fixing unit because this temperature plays a part in the overall temperature inside the apparatus which may lead to unwanted overheating of the thermal fuser (col. 11 lines 19-25).

2. Claims 2, 7, 9, 14 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

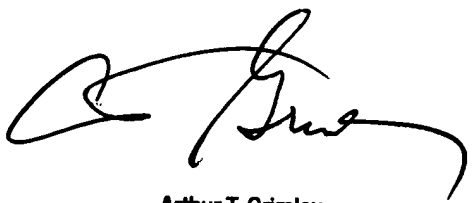
3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Response to Arguments

4. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues on p. 9 that the teachings of Toizumi does not teach the newly amended limitations of having a first and second heater, and first and second temperature sensors. The newly recited prior art teaches of Hagashi in view of Kato teaches the use of first and second heaters, along with their respective temperature sensing thermistors, and using the detection of a rise or fall in temperature rate to control the fixing operation.



Arthur T. Grimley
Supervisory Patent Examiner
Technology Center 2800

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Lee whose telephone number is 571-272-2846. The examiner can normally be reached on mon-fri 9:00 am-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on 571-272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PL 6/13/2005